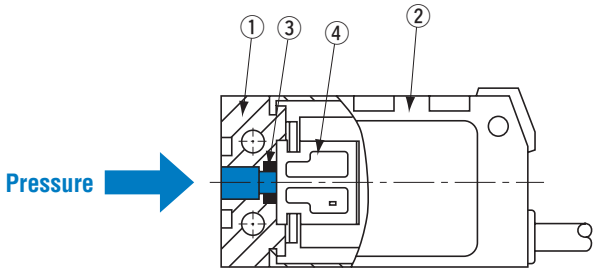
PRESSURE SWITCHES

PS40

INTERNAL STRUCTURE



	Part name	Material
①	Pressure port	POM (Polyoxymethylene)
②	Housing	PC (Polycarbonate)
③	"O" ring	Fluoro-rubber
④	Port block	LCP (Liquid crystal polymer)

■ FEATURES

- Compatible with non-corrosive gases
- Solidstate pressure switch with no mechanical moving parts
- 2 types of pressure ports are available
- Open collector output of either NPN or PNP is available
- Analog output type available

■ MODEL NUMBER DESIGNATION

P S 4 0 - 1 0 2 G - N A R

Series name

Rated pressure range
501 : 0 ~ 50 kPa
102 : 0 ~ 100 kPa
103 : 0 ~ 1000 kPa

Pressure reference
G : Gauge
V : Gauge (Vacuum)

Pressure port
R : R 1/8 male screw
M : M 5 female screw

Outputs
A : 1 switch output with adjustable hysteresis and analog output
W : 2 switch output

Switch output interface
N : NPN open collector
P : PNP open collector

■ LIST OF MODEL NUMBERS

Pressure port	Outputs	Switch output	102V –100 kPa	501G 50 kPa	102G 100 kPa	103G 1000 kPa
R 1/8 male screw	Adjustable hysteresis switch output + Analog output	NPN open collector output	PS40-102V-NAR	PS40-501G-NAR	PS40-102G-NAR	PS40-103G-NAR
		PNP open collector output	PS40-102V-PAR	⊘	PS40-102G-PAR	PS40-103G-PAR
	2 points switch output	NPN open collector output	PS40-102V-NWR	PS40-501G-NWR	PS40-102G-NWR	PS40-103G-NWR
		PNP open collector output	PS40-102V-PWR	⊘	PS40-102G-PWR	PS40-103G-PWR
M 5 female screw	Adjustable hysteresis switch output + Analog output	NPN open collector output	PS40-102V-NAM	PS40-501G-NAM	PS40-102G-NAM	PS40-103G-NAM
		PNP open collector output	PS40-102V-PAM	⊘	PS40-102G-PAM	PS40-103G-PAM
	2 points switch output	NPN open collector output	PS40-102V-NWM	PS40-501G-NWM	PS40-102G-NWM	PS40-103G-NWM
		PNP open collector output	PS40-102V-PWM	⊘	PS40-102G-PWM	PS40-103G-PWM

⊘ : Not available
❉ Verify the above model numbers when placing orders.

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.

Oct, 2005

PS40
PRESSURE SWITCHES

■ STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25±5 °C and excitation voltage of 12 V DC.

	Item / Model number		102V	501G	102G	103G
General specifications	Pressure reference		Gauge			
	Rated pressure range	kPa	– 100	50	100	1000
	Maximum pressure	kPa	200	100	200	1500
	Break-down pressure	kPa	500	250	500	2000
	Operating temp. range	°C	– 20 ~ 70			
	Compensated temp. range	°C	0 ~ 50			
	Operating humidity	%RH	35 ~ 85 (No condensation)			
	Storage temp.	°C	– 20 ~ 80			
	Pressure medium		Non-corrosive gases			
	Insulation resistance	MΩ minimum	100 (500 V DC)			
	Dielectric strength		500 V AC, 60 s (Leakage current 1 mA maximum)			
	Pressure port		R 1/8 (Female screw) or “O” ring groove (Female screw)			
	Net weight	g	Approx. 50			
Power	Supply voltage	V DC	10.8 ~ 30 V (Including ripple percentage)			
	Consumption current	maximum	17 mA (Only W type 25 mA maximum)			
Switch output	No. of outputs		1 or 2			
	Output interface		NPN or PNP open collector output			
	Setting method		Adjustable by VR			
	Adjustable range		Zero through rated pressure minimum			
	Display		Red LED ON (W type only : SW1 Red, SW2 Green)			
	Accuracy 0 ~ 50 °C (Reference temp.: 25 °C)	% F.S.	± 3			
	Hysteresis		Approx. 1 ~ 15 % of the set value (W type only 2 % F.S. maximum)			
	Switching capacity		30 V 80 mA			
	Residual voltage	V maximum	0.8 (NPN), 1.2 (PNP)			
	Response	ms	Approx. 1			
Analog output	Output voltage	V	1 ~ 5			
	Zero voltage	V	1 ± 0.1			
	Span voltage	V	4 ± 0.1			
	Output current	mA maximum	1 (Load resistance 5 kΩ minimum)			

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.

PS40
PRESSURE SWITCHES

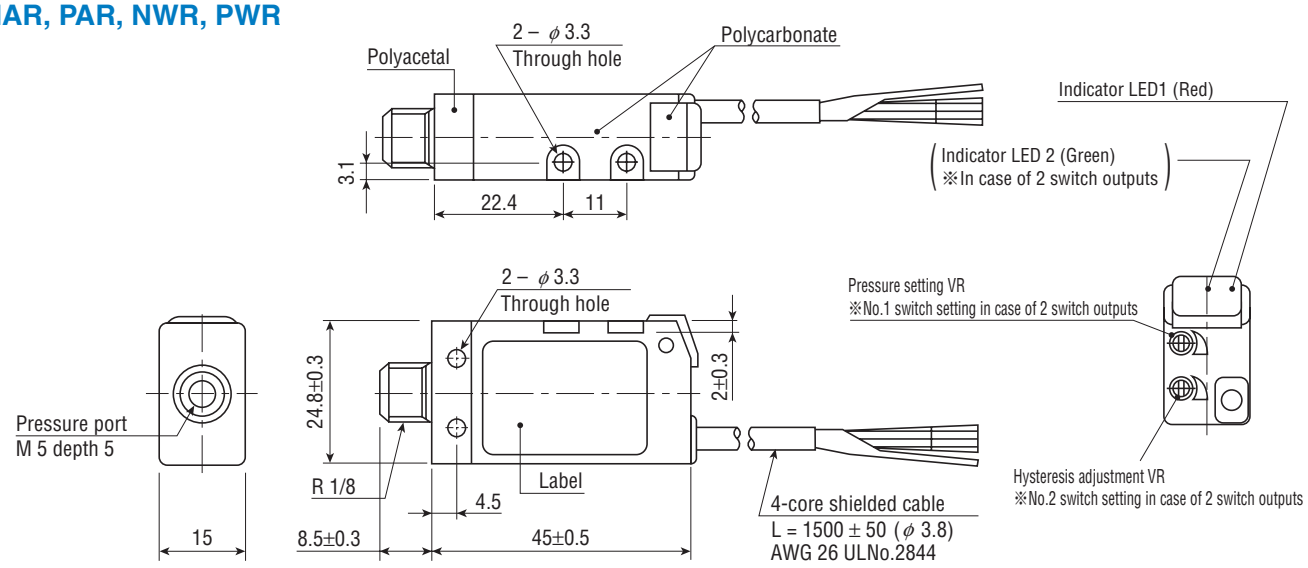
■ ENVIRONMENTAL CHARACTERISTICS

Test item	Test conditions (At 25 ± 5 °C)	Permissible change
Vibration	10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s², 3 directions for 2 hours each	Switch output setting and analog output (Zero voltage/span voltage): ± 2 %F.S. maximum, each
Shock	490 m/s², 3 directions for 3 times each	
Pressure cycling	0 ~ Rated pressure, 10^6 cycles	
Moisture resistance	40 °C, 90 ~ 95 %RH, 240 hrs.	

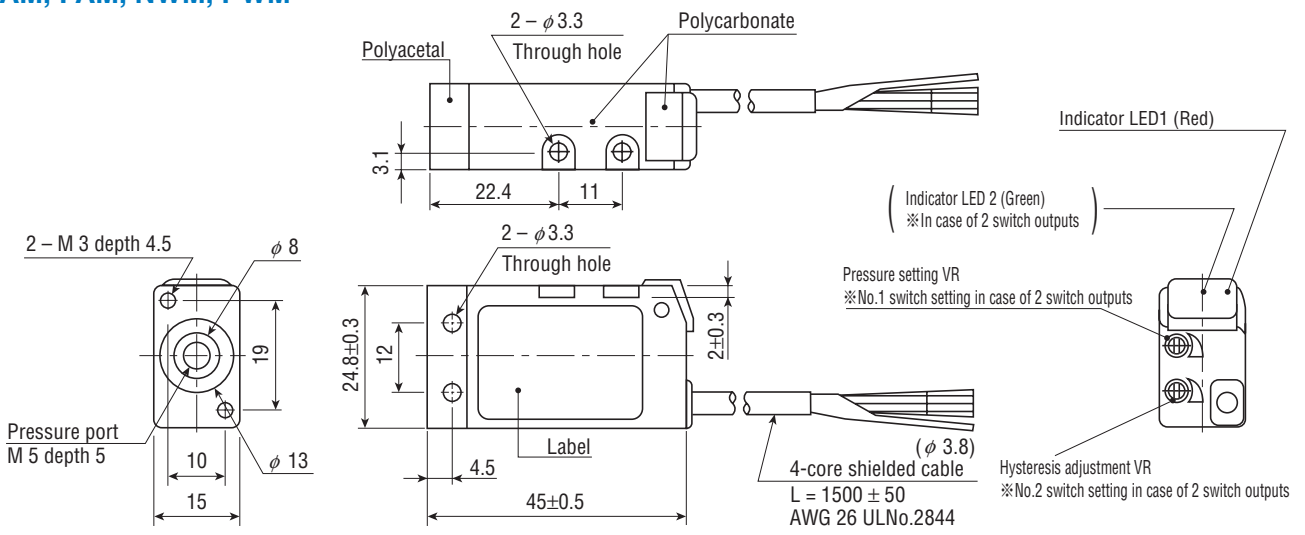
■ OUTLINE DIMENSIONS

Unless otherwise specified, tolerance : ± 0.5 (Unit: mm)

● NAR, PAR, NWR, PWR



● NAM, PAM, NWM, PWM



■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.

PS40
PRESSURE SWITCHES

PS40 (NAM, NAR, PAM, PAR)

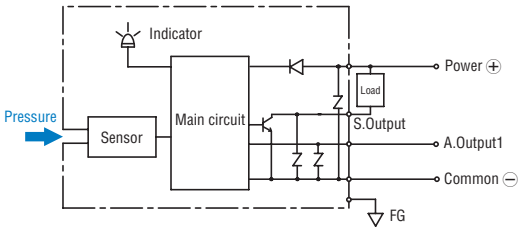
Wire color	Connection
Brown	Power ⊕
Black	Switch output
White	Analog output
Blue	Common
Shield	N.C.

PS40 (NWM, NWR, PWM, PWR)

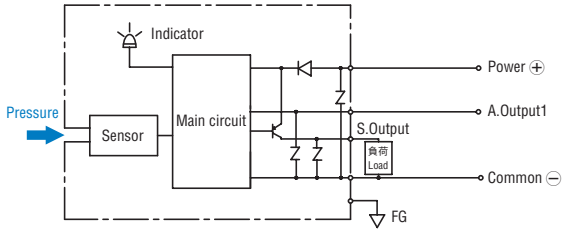
Wire color	Connection
Brown	Power ⊕
Black	Switch output 1
White	Switch output 2
Blue	Common
Shield	N.C.

■ INTERNAL ELECTRICAL SCHEMATICS

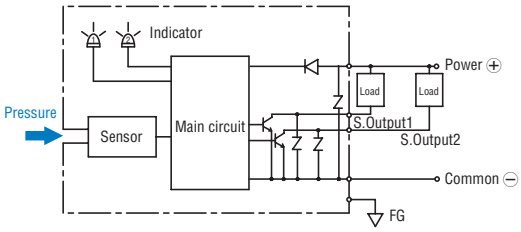
● NAN, NAR (NPN/Adjustable hysteresis switch)



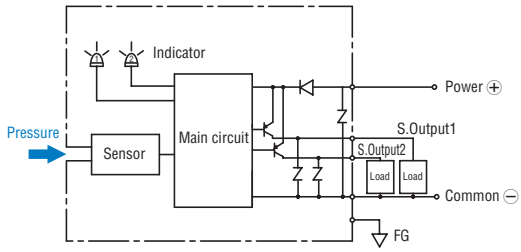
● PAN, PAR (PNP/Adjustable hysteresis switch)



● NWN, NWR (NPN/2 switch outputs)

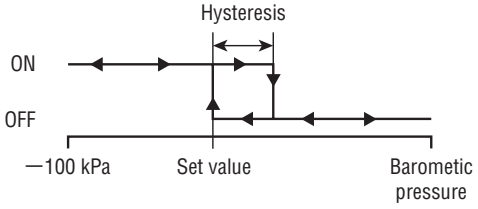


● PWN, PWR (PNP/2 switch outputs)

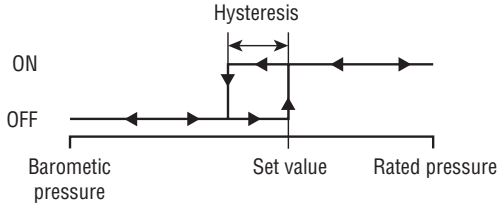


SWITCH OUTPUT SCHEMATICS

● PS40-102V



● PS40-＊＊＊G



❊ : ＊A＊ is adjustable hysteresis type.

■ Specifications are subject to change without notice. Specifications in this catalog are for reference. The formal specification sheets will be submitted upon request.